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3rd. $R=3$ inches = radius of cylinder and cones.

$$21 : 3 :: 6-x : h' = \frac{6-x}{7} = \text{height of each cone.}$$

$$12-2h' = \frac{72+2x}{7} = \text{height of cylinder.}$$

$$\text{Content of cylinder} = R^2 n' \left(\frac{72+2x}{7} \right) = \frac{648n'}{7} + \frac{18n'x}{7}.$$

$$\text{Content of cones} = R^2 n' \cdot \frac{2}{3} \left(\frac{6-x}{7} \right) = \frac{36n'}{7} - \frac{6n'x}{7}.$$

$$\text{Sum} = \frac{684n'}{7} + \frac{12n'x}{7} \dots (3).$$

$$\text{From (1) take (2)} = \frac{4860n'}{7} + \frac{3348n'x}{7} \dots (4).$$

$$\text{From (2) take (3)} = \frac{6804n'}{7} + \frac{756n'x}{7} \dots (5).$$

Equate (4) and (5) and reduce, and $x=\frac{3}{4}$, or $2x=1\frac{1}{2}$ inches.

Also solved by *H. W. DRAUGHON, H. C. WHITAKER, ALFRED HUME, C. E. MYERS, G. B. M. ZERR,* and *W. L. HARVEY.*

PROBLEMS.

10. Proposed by **SAMUEL HART WRIGHT, M. D., M. A., Ph. D.,** Penn Yan, Yates Co., N. Y.

A small cloud in the S. E. and altitude 70° , was soon after N. 60° E. with an altitude of 30° . In what direction was the wind blowing, the track of the cloud being the arc of a great circle?

11. Proposed by **CHAS. E. MYERS,** Canton, Ohio.

"Assuming the earth's orbit to be a circle, if a comet move in a parabola around the sun and in the plane of the earth's orbit, show that the comet cannot remain within the earth's orbit longer than 78 days."

12. Proposed by **F. P. MATZ, M. S., Ph. D.,** Professor of Mathematics and Astronomy in New Windsor College, New Windsor, Maryland.

If the measures of curvature and tortuosity of a curve be constant at every point of a curve, the curve will be a helix traced on a cylinder.

QUERIES AND INFORMATION.

Conducted by **J. M. COLLAU,** Monterey, Va. All contributions to this department should be sent to him.

Answer to Queries in the *American Mathematical Monthly* for March 1894. (Vol. I. No. 3. page 102.)

I. Omitting Euclid's Parallel-Postulate, but taking for granted all his other postulates and "common notions", it follows by Eu. I. 27, that two coplanar